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**DESCRIPTIONS OF NEW SPECIES OF CLICK BEETLES
FROM THE PALEARCTIC REGION,
WITH CHOROLOGICAL NOTES**

(Insecta Coleoptera Elateridae)

Riassunto

[Descrizione di nuove specie di elateridi della regione paleartica con note geonemiche]

Nel presente lavoro sono descritte nove specie di elateridi sotto elencate in dettaglio con note comparative; per tre specie dei generi *Anostirus*, *Ectinus*, *Craspedostethus*, vengono forniti nuovi dati geonemici e infine per alcune specie appartenenti a *Athous* (*Orthathous*), *Cardiophorus* e *Dicronychus* vengono descritti i maschi o la femmina, ignoti al momento della loro descrizione e raffigurati gli organi genitali.

Anostirus nerii n. sp. (Turchia occidentale) vicino ad *Anostirus binaghii* Platia & Gudenzi per il colore simile ma distinto per il pronoto molto allungato e le corte lamelle degli articoli antennali.

Agriotes alcarazensis n. sp. (Spagna) del gruppo *corsicus* Candèze, distinto per la punteggiatura del pronoto più leggera e separato da tutte le altre specie per i parameri dell'edeago molto allungati.

Athous (*Neonomopleus*) *granadensis* (Spagna) si avvicina a *A. (Neonomopleus) tenuis* Ch. Brisout, per l'aspetto generale e la lunghezza delle antenne, si distingue per il margine anteriore della fronte completo e raggiungente il clipeo, l'apice degli angoli posteriori del pronoto con corta spina, la notevole lunghezza delle elitre rispetto al pronoto.

Athous (*Haplathous*) *rameli* (Grecia) n. sp. simile a *A. (Haplathous) panellai* Platia & Schimmel si distingue per il pronoto più allungato, lo scutello leggermente carenato longitudinalmente, per le elitre più larghe e più lunghe rispetto al pronoto.

Dima schimmeli n. sp. (Grecia) vicina a *D. olympica* Meschnigg per la pubescenza del corpo in parte eretta, si distingue per il pronoto meno trasverso con la massima ampiezza dietro la metà e più fortemente ristretto in avanti.

Adrastus kerkiniensis n. sp. (Grecia) può essere confrontato con *A. axillaris* Erichson per le strie elitrali poco visibili nel terzo apicale, si può distinguere per la punteggiatura della fronte e del pronoto più robusta, la pubescenza più fine e ordinata, i parameri dell'edeago più snelli.

Cardiophorus assingi n. sp. (Turchia) fra le specie bicolori turchi si può confrontare con *C. cyanipennis* Mulsant ma si distingue per un colore metallico meno vivace, le ali atrofiche e le sclerificazioni della borsa copulatrice.

Cardiophorus corpulentus n. sp. (Turchia) per la forma generale del corpo si avvicina a *C. carnosus* Platia & Gudenzi ma si distingue per i tegumenti bronzati, l'ultimo segmento addominale non ferruginoso, le sclerificazioni della borsa copulatrice.

Cardiophorus kleteckai n. sp. (E Russia), confuso dagli autori con *C. ebeninus* (Germar) si distingue per i lati del pronoto meno arcuati e soprattutto per l'apice dei parameri dell'edeago non regolarmente ristretti all'apice.

Abstract

Nine new species of click-beetles belonging to genera *Anostirus*, *Agriotes*, *Athous* (*Neonomopleus*), *Athous* (*Haplathous*), *Dima*, *Adrastus* and *Cardiophorus* are described from Russia, Turkey, Greece and Spain. New chorological records for species of the genera *Anostirus*, *Ectinus* and *Craspedostethus* as well as new descriptions of males or females and drawings of genitalia for species of the genera *Athous* (*Orthathous*), *Cardiophorus* and *Dicronychus* are given:

Key words: Elateridae, *Anostirus*, *Agriotes*, *Ectinus*, *Athous* (*Orthathous*), *Athous* (*Neonomopleus*), *Athous* (*Haplathous*), *Dima*, *Adrastus*, *Cardiophorus*, *Craspedostethus*, *Dicronychus*, new species, new distributional records, Palearctic Region.

Introduction

Through the courtesy of several colleagues and museums we had the opportunity to examine series of click beetles collected in Spain, Croatia, Greece, Turkey and Russia. As a result of these studies we describe nine new species, give several new distributional records and describe male or female specimens of some species, for which this gender was unknown at the moment of the original description. Amongst the new species we want to emphasize the discovery of *Anostirus nerii* n. sp., a remarkable new species from Boz Dağ (W Turkey). It was collected in large numbers, males and females copulating on a tree of *Salix* sp., during an expedition carried out by the colleagues Farneti, Gudenzi and Neri.

We also received very interesting material, with three new species and a new distributional record, from Mr Gordon Ramel, coordinator of the Wetland Kerkini Project, designed to detect and preserve the biodiversity of this important site. Mr Ramel himself characterizes the site in this manner:

“Lake Kerkini is an artificial lake, created in 1932 on the river Strymon immediately south of the Greek border with Bulgaria and 80 km north of Thessaloniki. The area was originally an inland delta, a huge marsh where the river unloaded the debris it had collected on its journey past the Ryla and Pirin mountains of Bulgaria, and as a wetland habitat it was unique in Europe. The area is currently a RAMSAR and NATURA2000 site as well as a Wetland of International Importance for birds.

To the north the lake is bounded by the 2000 metre Serbo-Macedonian massif (Kerkini mountains) which forms the border with Bulgaria but which is split by the narrow Ruppel Gorge through which the river enters Greece and to the southwest it is bordered by the 1,000 metre Mavrovouni mountains. The nature reserve includes parts of both of these mountain ranges, extending to the summit of the Kerkini mountains, all of the riverine habitat between the border and the

lake, about 20 km, and has a total area of about 200 square km. The vegetation of the area is classified as para-mediterranean and mountainous mediterranean.”

Material and methods

Body measurements. Body length is measured along the midline from the anterior margin of the frons to the apex of the elytra; the width is measured across the broadest part of the entire beetle.

Pronotal measurements. The pronotal length is measured along the midline; the width at the broadest part, which is most usually at the hind angles.

Abbreviations. The names of institutions, museums and private collections containing material studied are abbreviated as follows:

BMNH	British Museum of Natural History (Dr M. Barclay), London (UK)
CGF	Gudenzi coll., Forlì (Italy)
CHCB	Houska coll., České Budějovice (Czech Rep.)
CPG	Platia coll., Gatteo (Italy)
CRG	Riese coll., Genoa (Italy)
CSBK	Kletecka coll., South Bohemian Museum, České Budějovice (Czech Rep.)
CSV	Schimmel coll., Vinningen (Germany)
CTW	Tarnawski coll., Zoological Institute, University of Wrocław (Poland)
MCSNG	Museo Civico di Storia Naturale (Dr R. Poggi), Genoa (Italy)
NMP	Museum of Natural History (Dr J. Hajek), Prague (Czech Rep.)
USMB	Upper Silesian Museum, Bytom (Poland)

The tribal placement of genera and species listed below follows SANCHEZ-RUIZ (1996).

Tribe **Prosternini** Gistel, 1856

Anostirus nerii n. sp. Figs 1, 13, 14, 15, 16 . Pictures f, g.

Material examined. Holotype ♂ - **Turkey:** Izmir, Ödemis-Boz Dağ, 1600-1800 m, 23.V.2008, Farneti, Gudenzi & Neri (CPG). 28 (7 ♂, 21 ♀) Paratypes – same data as HT (CPG; CGF).

Diagnosis. The new species resembles *A. binaghii* Platia & Gudenzi, 2006, as to general shape and colour, it can immediately be distinguished in the male by the longer pronotum and particularly by the more robust and longer antennae with intermediate articles carrying short lamellae.

Description. Male. Moderately shiny; bi-coloured: head, pronotum, scutellum, apical extremities of elytra, antennae and legs black; elytra yellowish; covered

with dense, short, yellow-golden vestiture, recumbent on elytra, longer and partially erect on head and pronotum.

Head with eyes just narrower than anterior margin of pronotum; frons flat on vertex, moderately impressed anteriorly; anterior margin obsolete, merged with clypeus; punctures coarse, variable in size and density, more or less clearly umbilicate with short, shagreened intervals or contiguous.

Antennae (fig. 13) exceeding apicis of posterior angles of pronotum by about two articles, serrate from third article on; second article small, conical, as long as wide; third subtriangular, 1.7x longer than wide and a little longer than fourth; fourth triangular, just longer than wide, very shortly lamellate; fifth-sixth triangular, just longer than wide with a better developed lamella, which is shorter than the article itself; seventh-ninth triangular, with lamellae nearly as long as the articles themselves; tenth slenderer, with subparallel sides and very short lamella; last article longer and narrower than penultimate, with subparallel sides and asymmetrically constricted at apical third.

Pronotum just longer than wide, widest at posterior angles, moderately and regularly convex; sides regularly arcuate, shortly sinuate at posterior angles, the latter short, truncate, diverging, acarinate; lateral margin forming a very narrow channel, completely visible in dorsal view; puncturation rather variable, very fine to coarser, uniformly distributed on entire surface; punctures deep, simple, their intervals variable, on average smaller than their own diameters.

Scutellum shield-like, flat or feebly impressed, punctured. Elytra 3x longer than pronotum and a little wider than it; sides subparallel from base to middle, then barely dilated and afterwards gradually narrowing to apicis; striae regularly marked on entire surface, punctured; interstriae flat, with rough surface and punctures denser and finer.

Last visible abdominal segment narrowing almost regularly from base to apex, symmetrically and deeply impressed on sides at mid-length.

Aedeagus as in fig. 1 (length 1.80 mm).

Female. Very distinct for the wider and convexer body, shorter antennae (fig. 14) nearly reaching the apicis of posterior angles of pronotum, articles without trace of lamellae, pronotum more arcuate, a little wider than long, and elytra clearly dilated after the middle.

Size. (♂) Length 11.4-11.6 mm, width 3.2-3.3 mm; (♀) length 10.9- 12.7 mm, width 3.37-3.87 mm.

Etymology. The species is dedicated to one of the collectors, Paolo Neri, specialist of Bembidiini (Coleoptera, Carabidae).

Ecological notes. All specimens were collected while copulating on a tree of *Salix* sp.

Anostirus castaneus (Linnaeus, 1758)

Material examined. 1 ♀ - Greece: Wetland Kerkini, Sultanitsa Site (41°19'N, 23°12'E), 19.-25.V.2008, G. Ramel, malaise trap (CPG).

Distribution. Widely distributed from Europe to Siberia. **New to Greece.**

Trap site description. Sultanitsa Site. North = 41°19'02,1 East=023°12'05,0 Altitude = 1485 metres a.s.l. Run from 28/04/2008 until the present. This trap is situated over the bog/seep that is the start of the Sultanitsa stream. This is an entirely homemade trap in the shape of a simple cone of blue material leading to a collecting bottle. It is placed immediately above the place where the bog turns into a stream and enters a beech forest. It faces down hill into the forest. The glade is the result of human endeavour, and the army used the site for an unknown purpose about 50 years ago.

Tribe **Agriotini** Champion, 1894

Agriotes alcarazensis n. sp. Figs 2, 17.

Material examined. Holotype ♂ - **Spain:** SW Albacete, Sierra de Alcaraz, 15 km NNE Riopar (38°31'55N, 02°25'01W), 1380 m, 7.IV.2003, V. Assing (CSV); 1 Paratype ♂- same data as HT (CPG).

Diagnosis. A species similar to *A. corsicus* Candèze, 1863, in colour and size, it can be separated immediately by the less robust punctuation of pronotum with deep, simple or slightly umbilicate punctures (coarser and more strongly umbilicate in *corsicus*), elytra feebly dilated behind the middle and aedeagus with remarkably elongated apicis of paramera.

Description. Male. Rather dull; head, pronotum and scutellum nearly entirely blackish; anterior margin and apicis of posterior angles of pronotum, middle of scutellum and elytra yellow-brown; antennae with first three articles yellowish, of lighter colour than the following; legs yellowish; body covered with dense, recumbent, yellow vestiture.

Frons moderately convex at vertex, flat at anterior margin, the latter straight, merged with clypeus; supra-antennal carinae not reaching anterior margin; punctures broad, simple or slightly umbilicate, with very short intervals or contiguous.

Antennae just surpassing apicis of posterior angles of pronotum; second article subcylindrical, third subconical, longer than wide, both subequal in length; second and third taken together 1.4x longer than fourth; fourth-tenth subtriangular, on average twice as long as wide; last a little longer than penultimate, regularly ellipsoidal.

Pronotum 1.1x longer than wide, widest at apicis of posterior angles; strongly convex with a narrowly impressed, mid-longitudinal line at basal slope; sides subparallel, posterior angles acute, not or just barely diverging, carinate; carinae

short, very fine, subparallel to lateral margins, these obsolete at middle; punctures rather uniformly distributed, on disc deep, simple or slightly umbilicate with short shagreened intervals, gradually denser laterally, becoming umbilicate and contiguous on sides.

Scutellum shield-like, moderately convex, densely punctured. Elytra 2.5x longer than pronotum, as wide as it, convex; sides subparallel in the first half, then moderately dilated behind the middle; striae well-impressed and punctured; interstriae flat with finer and rougher punctures.

Aedeagus as in fig. 2 (length 1.22 mm).

Female unknown.

Size. Length 7.3-8.1 mm; width 2.10-2.18 mm.

Etymology. The name is derived from the type locality, Sierra de Alcaraz.

Ectinus insidiosus (Lewis, 1894)

Material examined. 1 ♂ - **Russia:** Primorski Krai Rjazanovka, 5-10.VII.1993, P. Kučera (CSBK).

Distribution. Known from Japan. **New to Russia.**

Tribe **Dendrometrini** Gistel, 1856

Athous (Orthathous) monguzzii Platia & Gudenzi, 2007 Fig. 18.

Material examined. 1 ♀ - **Croatia:** Velebit, Žavižan, 26.VII.1989, R. Monguzzi (CPG).

Described on the basis of two male specimens from the same locality.

Female. It can be separated from the male by the more robust and convex body, shorter antennae not reaching apicis of posterior angles of pronotum by about two articles and elytra more strongly dilated behind the middle. Also present in the female are two symmetrical punctiform depressions at sides of basal slope of pronotum.

Size. Length 9 mm; width 2.75 mm.

Athous (Neonomopelus) granadensis n. sp. Pictures a, b, c, d, e.

Material examined. Holotype ♂ - Spain: Granada, 1898 (NMP) (*Nomopelus tenuis* Brisout det. Buysson).

Diagnosis. A species allied to *A. (Neonomopelus) tenuis* Ch. Brisout, 1866, as to general shape and length of antennae, it can be separated by the anterior margin of the frons fine, complete and touching clypeus; in the key to species given by Platia, 2003, it can be placed near *A. (N.) elongatus* Ch. Brisout, 1866, but can be distinguished by the elytra notably wider than base of pronotum, which has a short spine at apicis of posterior angles, elytra much longer than pronotum and aedeagus.

Description. Male. Head, pronotum and underbody darker, ferruginous, and the rest of body lighter, yellowish; covered with dense, yellow-golden vestiture.

Head with eyes just narrower than anterior margin of pronotum; frons from the middle anteriorly strongly and broadly impressed; anterior margin fine, complete and touching clypeus; punctures coarse, strongly umbilicate and contiguous.

Antennae (picture b) exceeding apices of posterior angles of pronotum by about 4 articles; second article subconical, shiny, slightly longer than broad; third conical, 1.8x longer than second, sculptured as the following; second and third, taken together as long as fourth; fourth and following articles very long, with subparallel sides, 3.5x longer than broad; last subellipsoidal, longer than penultimate, pointed at apex.

Pronotum as long as wide, widest at apices of posterior angles, regularly convex without depressions at base; sides moderately and regularly arcuate, slightly sinuate only near the posterior angles; the latter short, acuminate, feebly diverging, with a very short spine (picture c) directed upward; punctuation coarse, rather uniformly distributed on entire surface; punctures umbilicate with very short intervals on disc, contiguous at sides.

Scutellum subrectangular, flat, punctured. Elytra notably wider and 4.3x longer than pronotum; sides subparallel for more the two-thirds of its length; striae regularly marked and punctured; interstriae flat, densely and finely punctured.

Size. Length 11.3 mm; width 2.3 mm.

Male genitalia as in pictures d, e (length 1.12 mm).

Female. Unknown.

Etymology. The name is derived from the type locality, Granada.

Athous (Haplathous) rameli n. sp. Figs 3, 19, 20.

Material examined. Holotype ♂ - **Greece:** Wetland Kerkini, Petritsi Stream Site (41°17'N, 23°17'E), 12-18.V.2008, G. Ramel, malaise trap (CPG). 5 (4♂ 1♀) Paratypes - ♀ Wetland Kerkini, Kerkini Mts. (41°19'N, 23°16'E), 18.VI.2008, G. Ramel, yellow pan traps; 2 ♂ Helicopter Site (41°12'N, 23°03'E), 18.VI.2008, G. Ramel, yellow pan traps; 2 ♂ Midway Site (41°18'N, 23°16'E), 9-15.VI.2008, G. Ramel, malaise trap (BMNH; CPG).

Diagnosis. A species resembling *A. (Haplathous) panellai* Platia & Schimmel, 1991, it can be separated by the longer pronotum, wider and longer elytra as compared to pronotum.

Description. Male. Moderately shiny; head, pronotum and scutellum blackish (pronotum brownish at base and apices of front and hind angles); elytra brown with undefined blackish shadings; antennae blackish except for the first two articles brown; legs brown; covered with dense, yellow-fulvous, recumbent vestiture.

Head with eyes narrower than anterior margin of pronotum; frons deeply impressed from middle to anterior margin; the latter nearly straight, thickened, protruding

above the clypeus; punctures coarse, simple, contiguous.

Antennae exceeding apices of posterior angles of pronotum by about 3.5 articles; second article subcylindrical, just longer than wide; third conical more than twice as long as second, a little shorter than fourth, but with the same sculpture; fourth triangular, twice as long as wide; fifth-tenth slenderer, with subparallel sides; last longer than penultimate, very narrow, with parallel sides, pointed at apex.

Pronotum 1.13x longer than wide, widest at posterior angles; moderately convex on disc with two punctiform, symmetrical depressions at anterior third before the lateral slopes; sides subparallel at middle, barely narrowing at anterior third to the anterior angles, subsinuate before the posterior angles; the latter short, truncate, just diverging at apical extremities; punctures rather uniformly distributed, on the disc deep, simple, with very short intervals, just barely denser at sides.

Scutellum shield-like with a clear mid-longitudinal carina, punctured. Elytra wider and 3.1-3.4x longer than pronotum; sides subparallel for about two-thirds of its length; striae regularly marked; interstriae flat, with denser punctures and rough surface.

Articles of tarsi regularly decreasing in length.

Aedeagus as in fig. 3 (length 1.18 mm).

Female. Very different, as in all the species of the subgenus: body wider and convexer; antennae shorter, nearly reaching apices of posterior angles of pronotum; pronotum quadrangular, widest at middle with a shallow mid-longitudinal depression at basal slope.

Size. Length : 10-12.5 (♂) mm; width 2.65-2.87 (♂) – 3.62 (♀) mm.

Etymology. The species is dedicated to Mr Gordon Ramel, coordinator of the Wetland Kerkini Project, who also sent us the species.

Trap site descriptions. Petritsi Stream Site. North = 41°17'43,7, East = 023°17'12,6 Altitude = 250 metres a.s.l. Run from 11/02/2008 until the present. This is a smaller homemade trap (previously used for one week at a time in the mountains in 2007). It is situated immediately beside a permanent stream 1 km (by road) up into the Kerkini Mountains from the village of Neo Petritsi. It has a south facing aspect and is surrounded by plain trees (*Platanus orientalis*). The area away from the stream is sharply inclined and dominated by *Quercus coccifera*. The area is grazed to some extent by sheep and goats but otherwise untouched.

Kerkini Mountains Site. North = 41°17'19,5, East = 023°12'18,4, Altitude = 550 metres a.s.l. This trap was run from the 30th of April 2004 until 5th of June 2005, but was allowed to go slack from December to March to prevent it being weighed down and possibly torn by snow. This trap was situated on the south facing side of Kerkini mountains. It was a rich meadow, cut about twice a year, backing onto mixed deciduous forest. It is a relatively moist habitat on siliceous soils, damper than sites 2 and 3 with much more luxurious vegetation, but less damp than site 1.

The meadow is on the site of the old village of Ramna that was abandoned after WW2. It is fenced off, so it is not subject to any grazing, or dunging pressure. It changes drastically throughout the year, by June the vegetation is two metres tall in places, but the snow in winter flattens all the herbaceous vegetation.

Dima schimmeli n. sp. Figs 4, 22.

Material examined. Holotype ♂ - Greece: Wetland Kerkini, Ramna Site (41°17'N, 23°11'E), 750 m, 30.IV-4.V.2008, G. Ramel, malaise trap (CPG).

Diagnosis. A species resembling *D. olympica* Meschnigg, 1934, by the long and partially erect vestiture, it can be separated by the less transverse pronotum (only 1.2x wider than long, 1.4x in *olympica*), which is widest behind the middle and rather strongly narrowing from behind the middle to anterior margin and by the aedeagus.

Description. Male. Shiny, particularly on pronotum; entirely dark brown except for antennae, tibiae, tarsi and elytral margins lighter, brown-ferruginous; covered with long, yellow fulvous vestiture, partially erect on head and sides of pronotum, more recumbent on elytra.

Head with eyes narrower than anterior margin of pronotum; frons widely impressed from vertex to anterior third; anterior margin directed downwards and merged with clypeus; punctures coarse, of variable diameters, deep, simple or umbilicate, with variable, on average very short intervals.

Antennae exceeding apices of posterior angles of pronotum by about three articles, moderately serrate from fourth article on; second and third subconical, subequal in length, taken together as long as fourth; fourth-tenth conical, on average 2.2x longer than wide; last a little longer than penultimate, with subparallel sides, pointed at apex.

Pronotum 1.2x wider than long, widest behind the middle, convex on the disc, without a trace of a mid-longitudinal depression, moderately flattened at anterior angles; sides arcuate, narrowing from behind the middle to anterior margin, strongly sinuate before posterior angles; the latter short, acute, strongly diverging, carinate; carina prolonged to the anterior margin, running parallel to the lateral margin and forming a continuous bulge; puncturation very irregular, punctures on central disc deep, simple, variable in diameter, with shining and variable intervals, towards the sides denser, often umbilicate, with very short intervals, at the base very fine and much more sparse.

Scutellum semicircular, flat, finely punctured. Elytra wider and 3.2x longer than pronotum, ovaliform; striae impressed, finely punctured; interstriae subconvex, strongly punctured, with rough surface.

Aedeagus as in fig. 4 (length 2.7 mm).

Female unknown.

Size. Length 10.3 mm; width 3.85 mm.

Etymology. The species is dedicated to my friend and colleague, R. Schimmel, the well-known specialist of this genus of elaterids.

Trap site descriptions. Ramna Site. North = 41°17'42,5, East = 023°11'33,1, Altitude = 750 metres a.s.l. Run from 24/03/2008 until the present. This trap is a small-size Czech design that I have slightly modified. It is situated beside a fast flowing, permanent stream. It has a south-facing aspect and is surrounded by mixed deciduous forest. It is well shaded and has a good understory until around the 22th of the May, when the cows reached it. As of June the 1st the herbaceous understory was almost completely removed and the cows moved on, however the vegetation recovered its spring level of cover.

Tribe **Synaptini** Gistel, 1856

Adrastus kerkiniensis n. sp. Figs 5, 21.

Material examined. Holotype ♂ - **Greece:** Wetland Kerkini, Beabies Site (41°19'N, 23°13'E), 16-22.VI.2008, G. Ramel, malaise trap (CPG). 12 Paratypes (6♂, 6♀ - (1) same data as HT, (10) 30.VI-16.VII.2008; (1) 7-13.VII.2008 (BMNH; CPG).

Diagnosis. A species belonging to the *A. limbatus*- group because of antennae serrate from the third article on, it is allied to *A. axillaris* Erichson, 1842, for the striae of elytra moderate at apical third, but can be separated by the coarser frontal and pronotal punctures, finer and more regular vestiture as well as slenderer paramera of aedeagus.

Description. Male. Moderately shiny, entirely blackish or with elytra dark-brown and just barely lighter than head and pronotum; only first two articles of antennae and legs yellowish; covered with dense, yellowish vestiture, partially erect at sides of body.

Frons convex, anterior margin straight, merged with the clypeus; supra-antennal carinae reaching anterior margin; punctures coarse, deep, simple or slightly umbilicate, variable in diameter with intervals on average smaller than their own diameters. Antennae exceeding apices of posterior angles of pronotum by about two articles, serrate from third article on; second article cylindrical, just longer than wide; third triangular, as long as fourth and with the same sculpture, but a little narrower, nearly twice as long as wide; fourth-sixth triangular, less than twice as long as wide; seventh-tenth slenderer, about twice as long as wide; last a little longer than penultimate, subellipsoidal.

Pronotum 1.1x wider than long, widest at posterior angles, strongly and regularly convex; sides subparallel at middle, abruptly narrowing at anterior third, feebly sinuate before the posterior angles; the latter long, acute, not or just barely diverging, with carina directed mediad; lateral margin well apparent and regularly curved from middle to anterior margin; punctures very similar to frontal punctures,

deep, simple, with variable intervals, on average equal to or smaller than their own diameters.

Scutellum shield-like, flat, with a very fine and sparse puncturation, nearly smooth.

Elytra as wide as and 3.2x longer than pronotum; sides subparallel from base to middle, then very gradually narrowing; striae well-marked and punctured, more superficially at posterior third; interstriae flat, with finer punctures.

Aedeagus as in fig. 5 (length 0.90 mm).

Female. It can be separated by the more convex body and shorter antennae just exceeding apices of posterior angles of pronotum and with second article clearly longer than wide.

Size. Length 4.6- 5 mm; width 1.2-1.3 mm.

Etymology. The name is derived from the type locality, Wetland Kerkini.

Trap site descriptions. Beabies Site. North = 41°19'15,4, East = 23°13'39,6, Altitude = 1,150 metres a.s.l. Run from 24/03/2008 until the present. This trap is the full-size Czech design trap from Krousis, 2007. It is situated beside a fast flowing, permanent stream (Sultanitsa). It is in a natural mixed beech x *Abies* sp. forest, with a few other tree species mixed in. It has a north-north-east facing aspect, and there was still snow falling there in April. Although this site is logged about once every 25 years, it is otherwise undisturbed. Other vegetation includes brambles, wild rose and various herbs.

Tribe **Cardiophorini** Candèze, 1860

Cardiophorus assingi n. sp. Figs 11, 24.

Material examined. Holotype ♀ - **Turkey:** Aydin, Karincali Dagi, ca 10 km WSW Karakas (37°42'17N, 28°33'50E), 1230 m, V. Assing (CSV); 1 Paratype ♀ - same data as HT (CPG).

Diagnosis. The second bicoloured species with atrophied wings besides *C. eliasi* Pic, 1904, known from Turkey; as to general shape and bicoloured pronotum it resembles to *C. cyanipennis* Mulsant, 1852, but can be separated by the less-apparent metallic colour of elytra, black legs, atrophied wings and plates of copulatrix bursa.

Description. Female. Moderately shiny; bicoloured; head, scutellum, prosternum, thorax and abdomen black; elytra with bluish metallic lustre in holotype, black with only a scarcely apparent bluish lustre in paratype; pronotum bicoloured, red-orange with a v-shaped black spot departing from anterior margin and reaching to middle of basal slope; propleura black in the anterior half and red-orange in the posterior half; antennae and legs blackish; covered with short, dense, recumbent, yellowish vestiture.

Frons flat, just impressed at anterior margin; the latter complete, regularly arcuate,

just barely protruding above the clypeus; punctures deep, simple, on average of the same diameter, nearly contiguous.

Antennae exceeding apicis of posterior angles of pronotum by one article, moderately serrate from the third article on; second article subcylindrical, longer than wide, shorter than third; third-tenth subtriangular, approximately of the same length, about twice as long as wide; last as long as penultimate, ellipsoidal.

Pronotum just wider than long, widest at middle, strongly and regularly convex; sides arcuate, regularly narrowing from middle anteriorly and posteriorly; posterior angles short, converging at apicis, with a short, scarcely apparent carina; suture-like margins shortly visible only at middle; puncturation very feeble, punctures fine, simple, of variable diameters, irregularly mixed on entire surface, with very short to larger intervals.

Scutellum heart-shaped, as long as wide, flat to moderately impressed, finely punctured. Elytra as wide as and 2.35x longer than pronotum; sides ovaliform, widest at middle, moderately flattened on disc; striae well-marked and regularly punctured; interstriae flat, finely punctured.

Wings atrophied, the beetle is not able to fly.

Claws simple.

Sclerotic plates of bursa copulatrix as in fig. 11.

Male unknown.

Size. Length 7.3-7.4 mm; width 2.25-2.3 mm.

Etymology. The species is dedicated to its collector, V. Assing.

Cardiophorus corpulentus n. sp. Figs 12, 23.

Material examined. Holotype ♀ - **Turkey:** Karhamanmaraş, 34 km SW of Karhamanmaraş (37°22'57"N, 36°40'42"E), 1070 m, 12.IV.2004, V. Assing (CSV).

Diagnosis. A species resembling *C. carnosus* Platia & Gudenzi, 2002, as to robust and convex body, it is immediately distinguished by the entirely bronzed colour, last abdominal segment not reddish and bursa copulatrix.

Description. Female. Rather dull; entirely dark bronze with tibiae and tarsi lighter; covered with short, dense, recumbent, fulvous vestiture.

Frons flat, lightly impressed at anterior margin; the latter complete, regularly arcuate, just barely protruding above the clypeus; punctures simple, very dense, with very short intervals or contiguous. Antennae reaching apicis of posterior angles of pronotum, moderately serrate from third article on; second subcylindrical, a little longer than wide; fourth-tenth subtriangular, approximately of the same length, more than twice as long as wide; last as long as penultimate, subellipsoidal, briefly constricted at apex.

Pronotum 1.26x wider than long, widest at middle, strongly and regularly convex;

sides strongly arcuate, narrowing regularly both anteriorly and posteriorly from the middle, posterior angles short, truncate, scarcely diverging, with short carinae; lateral suture-like margins obsolete at anterior third; puncturation similar to that of frons; punctures simple, uniformly distributed, approximately of the same size, with very short intervals or contiguous.

Scutellum heart-shaped, as long as wide, gently impressed at middle, punctured. Elytra as wide as and 2.8x longer than pronotum; sides ovaliform, widest at middle; striae impressed and punctured; interstriae subconvex, with finer and denser punctures.

Claws simple.

Sclerotic plates of bursa copulatrix as in fig. 12.

Male unknown.

Size. Length 8.4 mm; width 3 mm.

Etymology. The name is derived from the shape of the body.

Cardiophorus kleteckai n. sp. Figs 7, 9, 25.

Cardiophorus ebeninus sensu Cherepanov, 1957: 239 and 1965: 46, 169 (nec Germar, 1829).

Material examined. Holotype ♂ - **Russia:** Tuva Reg., near Kyzyl, bank of the Ka-Chem river, 4-6.VI.1997, S. Vashchenko (CRG don. MCSNG). 8 Paratypes (6 ♂, 2 ♀) – (3) Tuva Reg., Ujukskij Mts., 22.V.-6.VI.1998, S. Vashchenko; (5) Tuva reg., 10 km NE Erzin, 15.VI.1994, Z. Kletečka (CPG; CHCB; CSBK).

Diagnosis. A species confused by Cherepanov and other authors with *C. ebeninus* (Germar, 1829), it can be separated by the less arcuate sides of pronotum and particularly by the shape of the male genitalia.

Description. Male. Moderately shiny; entirely black-piceous with only legs brown and articulations of legs reddish; covered with very fine, short, recumbent, yellowish vestiture.

Frons flat, anterior margin regularly arcuate; punctures deep, simple, with very short interstices. Antennae exceeding apices of posterior angles of pronotum by one article; moderately serrate from third article on; second subconical, about twice as long as wide and shorter than third; third-tenth triangular, subequal in length, about twice as long as wide; last as long as penultimate, subellipsoidal.

Pronotum as long as wide, widest at middle and at posterior angles, strongly and regularly convex with a vestige of a mid-longitudinal impressed line at basal slope; sides moderately and regularly arcuate, just barely sinuate before the apices of posterior angles; the latter short, truncate, not divergent, with a short and feeble carina directed anteriorly; puncturation similar to that of frons, rather uniformly distributed.

Scutellum heart-shaped, as long as wide, with mid-longitudinal depression, finely punctured. Elytra on average 2.3x longer than pronotum; sides ovaliform, widest

at about mid-length; striae deeply impressed and moderately punctured; interstriae subconvex with finer punctures.

Claws simple.

Aedeagus as in fig. 7 (length 1.06 mm).

Female. Extremely similar to male, with shorter antennae not reaching apices of posterior angles of pronotum. Bursa copulatrix with two symmetrical plates and rudimental intermediate pieces as in fig. 9.

Size. Length 6-7.4 mm; width 1.93-2.25 mm.

Etymology. Dedicated to one of its collectors, Mr Zdenek Kletečka of the South Bohemian Museum, České Budějovice, who sent me the material with Mr F. Houska.

Cardiophorus witzgalli Platia & Gudenzi, 2002 Fig. 6.

Material examined. 2 ♂ - **Turkey:** İçel, 10 km S of Aydinlar, 1000 m, 28-30.V.2001, J. Kurzawa (CPG; CTW).

The description was based on a female specimen.

Male. Identical to female as to size and colour, with a similar regularly mixed double puncturation of pronotum. It can be separated only by the less arcuate sides of pronotum.

Aedeagus as in fig. 6 (length 0.8 mm).

Cardiophorus bellus Platia & Gudenzi, 2000 Fig. 10.

Material examined. 1 Paratype ♀ - **Turkey:** vil. Mardin, Akreşa gec. env., 30.IV.-2.V.2000, J. Mertlik (CPG).

The drawing of the sclerotic plates of the bursa copulatrix (fig. 10) of a paratype was omitted at the original description of the species.

Dicronychus apteriformis Platia & Gudenzi, 2004 Fig. 8, 26.

Material examined. 2 ♂ - **Turkey:** Izmir, 5 km S Tire, N slope, 990 m, 9.IV.2006, V. Assing. (CPG; CSV).

The description was based on a female specimen. The male is very similar and can be separated from the female by the smaller and slenderer body and the longer antennae.

Aedeagus as in fig. 8 (length 0.87 mm).

Craspedostethus linnavuorii Platia & Gudenzi, 1999.

Material examined. 7 specimens - **Turkey:** (6) Kahraman Maras, 50 km S of Goksun, 750 m, 26.VII.2006, R. Dobosz; (1) Adiyaman, Nemrut Dagı N.P., Cesme Pension, 1390 m, 27-28.VII.2004, R. Dobosz, at light (coll. Upper Silesian Museum Byton (USMB), Poland).

Described from Iraq. **New to Turkey.**

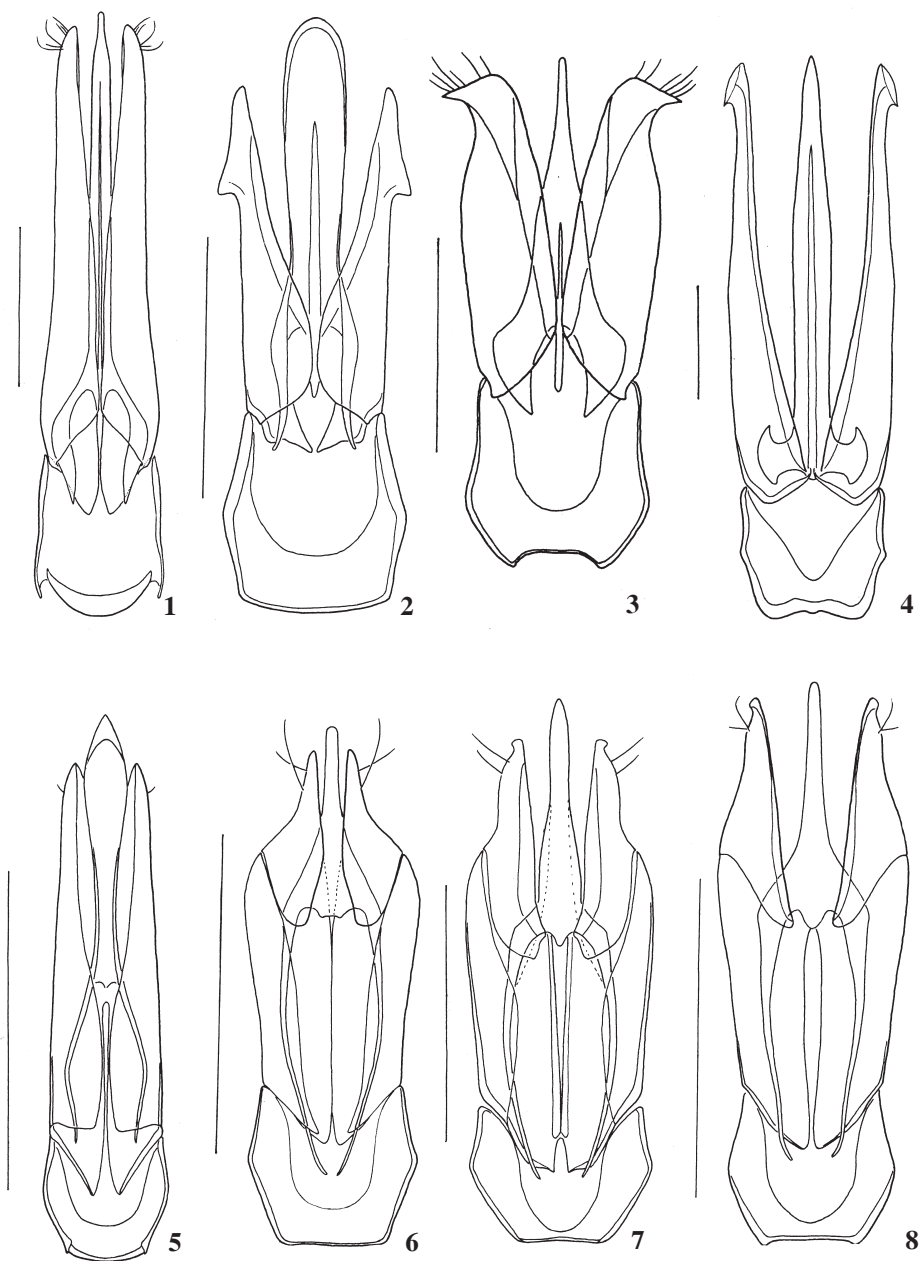
Acknowledgements

We are indebted to the following persons in alphabetical order: Dr M.V.L. Barclay, Head Curator of Coleoptera, British Museum of Natural History, London, Wetland Kerkini Project; Dr F. Farneti, Forlì; Dr J. Hajek, Prague, Museum of Natural History; Mr F. Houska, České Budějovice; Mr Z. Kletečka, České Budějovice, South Bohemian Museum; R. Monguzzi, Milano; Dr T. Naziridis, Director of the Wetland Kerkini Project; Mr P. Neri, Forlì; Mr Gordon Ramel, coordinator of the Wetland Kerkini Project; Mr S. Riese, Genoa; Mr R. Schimmel, Vinningen; Dr D. Tarnawski, Zoological Institute, University of Wrocław.

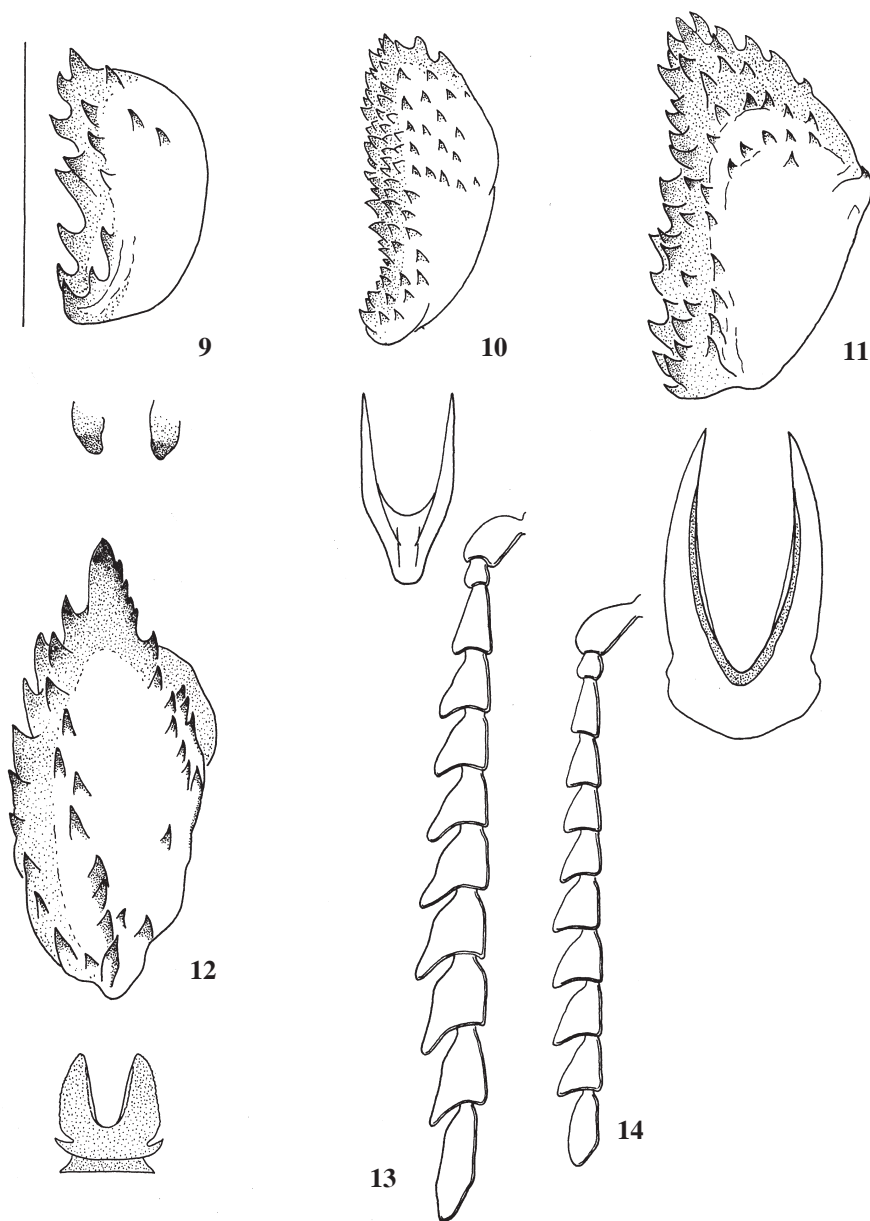
We thank Dr P. Cate, Vienna, very much for the critical revision of the paper and the correction of the English manuscript.

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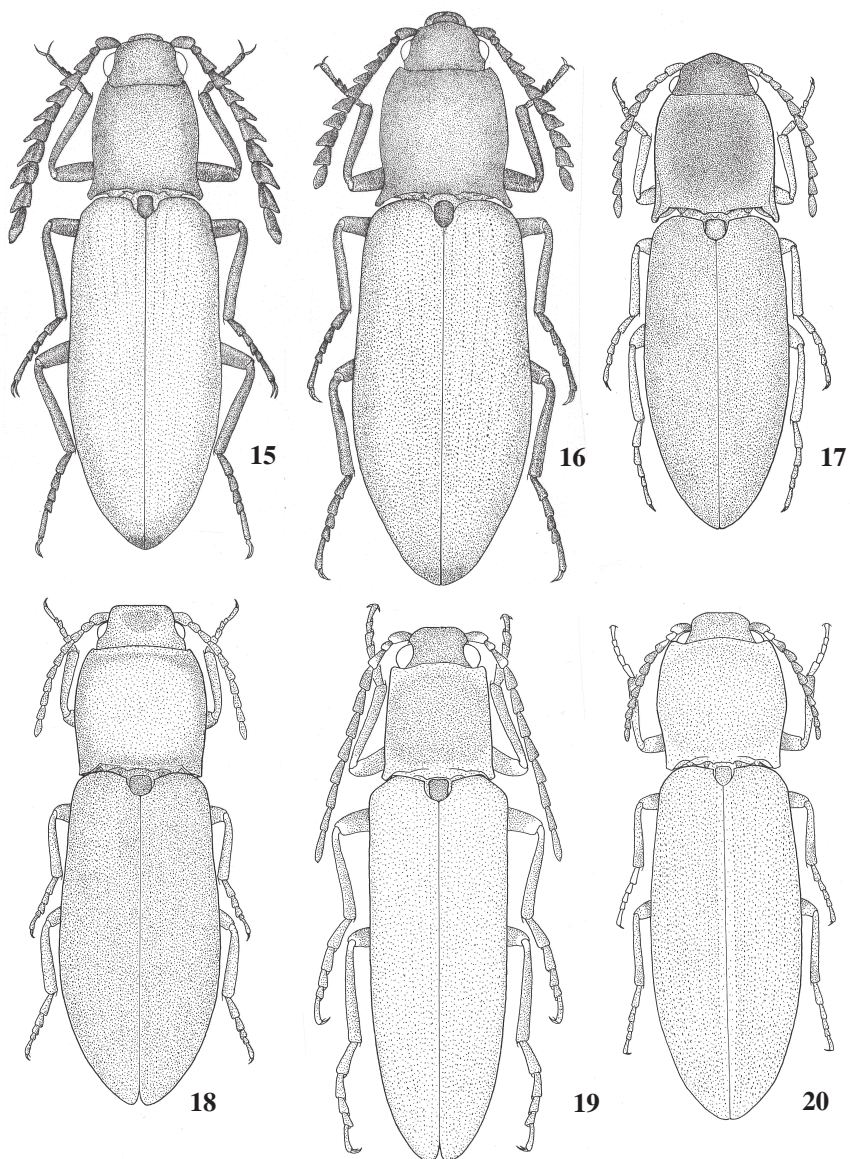
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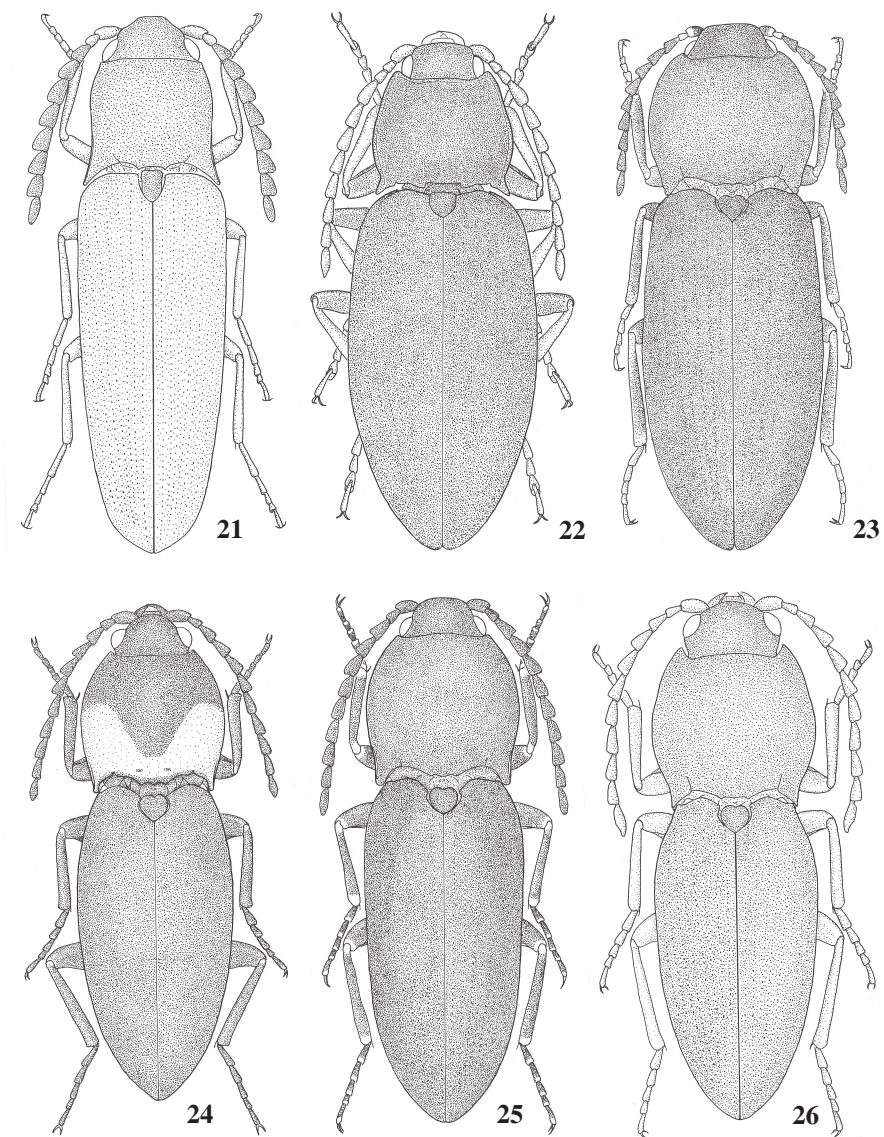
Figs 1-8. Male genitalia in dorsal view. 1. *Anostirus nerii* n. sp.; 2. *Agriotes alcarazensis* n.sp.; 3. *A. (Haplathous) rameli* n. sp.; 4. *Dima schimmeli* n. sp.; 5. *Adrastus kerkiniensis* n. sp.; 6. *Cardiophorus witzgalli* Platia & Gudenzi; 7. *Cardiophorus kleteckai* n. sp.; 8. *Dicronychus apteriformis* Platia & Gudenzi. (Scale bar = 0.5 mm)



Figs 9-12. Sclerites of bursa copulatrix. 9. *Cardiophorus kleteckai* n.sp.; 10. *Cardiophorus bellus* Platia & Gudenzi; 11. *Cardiophorus assingi* n. sp.; 12. *Cardiophorus corpulentus* n. sp.
Figs 13-14. Antennae. 13. *Anostirus nerii* n. sp. ♂; 14. *Anostirus nerii* n. sp. ♀. (Scale bar = 0.5 mm).



Figs 15-20. Habitus. 15. *Anostirus nerii* n. sp. ♂; 16. *Anostirus nerii* n. sp. ♀; 17. *Agriotes alcarazensis* n.sp.; 18. *A. (Orthathous) monguzzii* ♀ Platia & Gudenzi; 19. *A. (Haplathous) rameli* n. sp. ♂; 20. *A. (Haplathous) rameli* n. sp. ♀.



Figs 21-26. Habitus. 21. *Adrastus kerkiniensis* n. sp. ♂; 22. *Dima schimmeli* n. sp.; 23. *Cardiophorus corpulentus* n. sp.; 24. *Cardiophorus assingi* n. sp.; 25. *Cardiophorus kleteckai* n. sp.; 26. *Dicronychus apteriformis* ♂ Platia & Gudenzi.



Athous (Neonomopelus) granadensis n. sp. - **a.** Adult ♂; **b.** First antennal articles; **c.** Apex of posterior angle of pronotum; **d.** Male genitalia; **e.** Particular of male genitalia.



Anostirus nerii n. sp. - **f.** Adult ♂; **g.** Adult ♀.